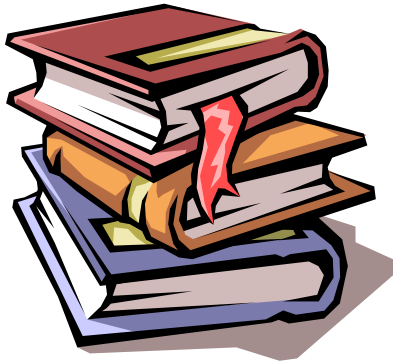# Information Needs Assessment of Speech Language Pathologists and Audiologists in Idaho

Presented by

Ruiling Guo
Janene Willer
Barbara Bain

Idaho State University

July 23, 2006

INTRODUCTION

Some studies on information needs assessment in the field of health related disciplines have been published in recent years. Lee and her colleagues conducted research on the information needs and use in the Tennessee Public health community in 1999 (Lee, et al 2003). Another study on nursing information needs assessment was done by the Royal College of Nursing College in the United Kingdom in 2005 (Bertulis, 2005). The researchers intended to find out what information nurses and other health care professionals need and how the information changed their practice. Sstudies on information needs assessment on speech language pathologists and audiologist have not been conducted. Therefore, this research project has been chosen for the following reasons.

First, Idaho is a rural state. Geographically, it is the 14th largest state in the United States, covering 83,574 square miles. Of Idaho's 44 counties, 21 are classified as rural or frontier counties, and/or are "medically underserved." There are many patients in Idaho suffering from speech, language, and hearing disorders, who may not receive appropriate treatment. For example, many adults who have a stroke may have long-term communication issues and limited services are available in rural Idaho to meet their needs.

Second, Idaho has a shortage of speech-language pathologists and audiologists, so the need is critical. A recent publication of the American Speech-Language Hearing Association (ASHA) stated that "…Another 9 states – Arizona, California, Georgia, **Idaho**, Indiana, Maryland, New Mexico, North Carolina, and Virginia – will have the highest rate of job growth, with a 50% or more increase in jobs in the next decade (Boswell 2002, p.3)." This quote indicates that Idaho needs more speech –language pathologists and audiologists. In clinical settings, speech-language pathologists and audiologists are busy serving clients with communication disorders. They may have little time to search health information for their decision-making when they assess and treat patients with complex and/or sever communication disorders. This lack of information may adversely impact the quality of care for these patients.

Third, Idaho has many graduates in speech-language pathology (SLP) and audiology who have inadequate access to the Idaho State University's Library information services after they graduated from ISU. Based on the 2005 Idaho Speech Language and Hearing Association (ISHA) Directory, 95 of 195 members graduated from the Idaho State University, which accounts for 48.7% of the total members of ISHA. Currently, some of the speech language pathologists and audiologists are working in private hospitals, clinics, and public schools which cannot afford the extremely expensive online medical databases and journals. In addition, the speech language pathologists and audiologists may find it difficult to come to the Idaho State University's Library in person because of the distance and limited time.

Fourth, some of speech-language pathologists and audiologists graduated from their graduate programs in universities many years ago. In Idaho, 80.3% of Speech Language Pathologists and Audiologists graduated before 2000. 52.9% graduated before 1990 (2005 Idaho Speech Language and Hearing Association (ISHA) Directory). Since then, many rapid changes in the information world as well as advances in professional knowledge have occurred. To provide quality of care to their patients, the speech language pathologists and audiologists need to update their knowledge to keep up the pace with new development in their professions. They need to learn what evidence-based medicine is and how to implement it. In addition, they need to develop their literature searching skills to find best evidence resources effectively for their assessment and treatment of clients with communication disorders.

Therefore, the objective of this research project was to identify what information the Idaho speech language pathologists and audiologists need, what computer and information searching knowledge and skills they have, and what information resources they can access when they need it in the clinical practice.

METHODOLOGY

The survey participants included all members listed in the 2005 Idaho Speech-Language and Hearing Association Directory. A questionnaire was designed for the

distribution and a letter explaining the purposes of the survey and the options for responding was drafted. All participants were given several options of how to return the survey either via online (WebCT) or hard copy, such as email attachment, mail, and onsite distribution. The letter and instructions for responding to the survey were distributed to all professionals with an email address via email. For those with no email address, the letter and survey with a self-addressed envelop was sent in the mail. An option was given to either group for access to the online survey or a hard copy. For those emails that failed to go through, a letter and survey were sent to professionals via mail.

The survey was also made available to professionals at the annual state convention on March 6, 2006. A reminder email/letter to respond was sent three weeks later to professionals who had not responded. Both a total rate of return and rate of return of online versus hard copy was calculated. The data analysis was completed regarding the demographic information, information needs, computer and Internet access, knowledge of evidence-based, searching skills in databases searching, interest in receiving training program, and training methods and hours of training.

RESULTS

General Survey Information

A total of 217 surveys were distributed. There was 38.71% response rate (84/217). The return results of three distribution methods were 33 via mail (15.21%), 35 via online (16.13%), and 16 via onsite (7.37%), respectively. See Figure 1.

Demographic Information

The tables and figures below showed the demographic information of the respondents. Out of 217 respondents, 45 (53.6%) worked in the school system. The respondents working in private practice accounted for 15 (17.9%), 9 (10.7%) in hospitals or rehabilitation centers, and 7 (8.3%) at universities. 13 (15.5%) of respondents were

audiologists, and 69 (82.1%) speech language pathologists. One respondent was an audiologist as well as a speech language pathologist and one was teacher of the hearing impaired/deaf. There were 6 males and 77 females among the respondents. It is clear that females are the dominant group in this field. Concerning education background, 79 ((90.4%) had master's degree, 4 doctorate and 1 bachelor degree. 45 respondents (53.5%) have more than 11 years of working experience in the field of speech language pathology and audiology. Fifty-nine (70.2%) of respondents work more than 36 hours. For more detailed information, see Table 1, Figure 1, Figure 2 and Figure 3.

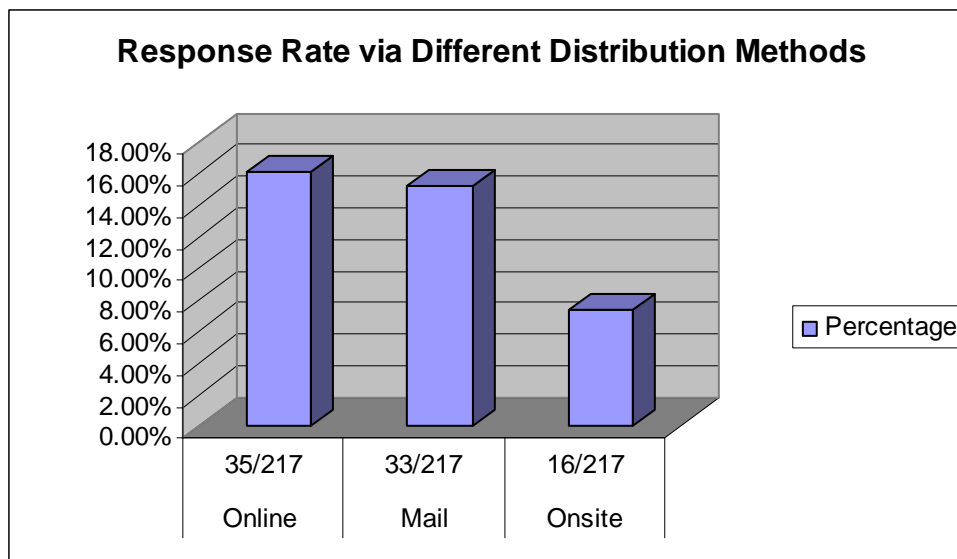**Figure 1. Response Rate via Different Distribution Methods**

Table 1. Highest Degree of Education

Degree of Education		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bachelor's degree	1	1.2	1.2	1.2
	Master's degree	79	94.0	94.0	95.2
	Doctorate	4	4.8	4.8	100
	Total	84	100.0	100.0	

Figure 1. Distribution of Working Setting

Distribution of Working Setting

10%

8%

18%

53%

11%

- ☐ School System
- ☐ Hosptial/Reh Center
- ☐ Private Practice
- ☐ University
- ☐ Other
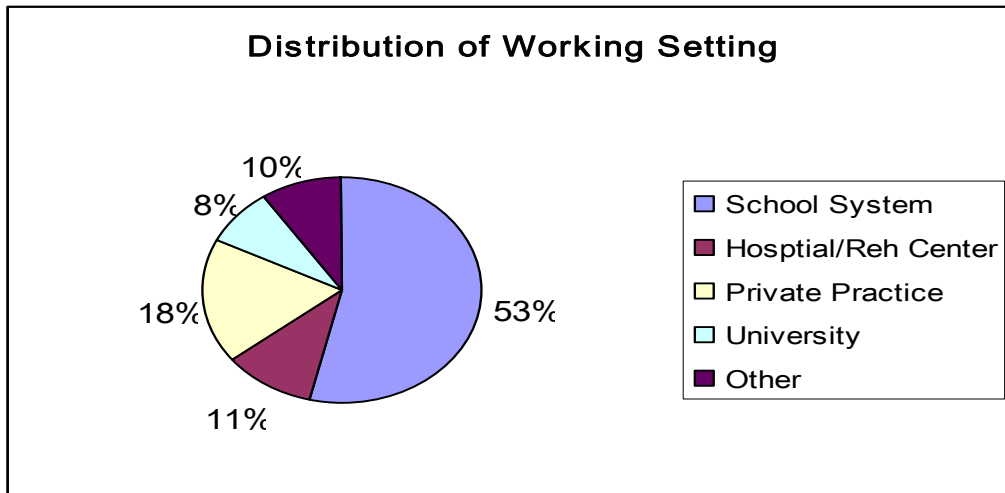
Figure 2. Region Distribution of Respondents in Idaho

Region Distribution of Respondents in Idaho

Northen
13%

Eastern
38%

Western
49%

- ☐ Northen
- ☐ Western
- ☐ Eastern
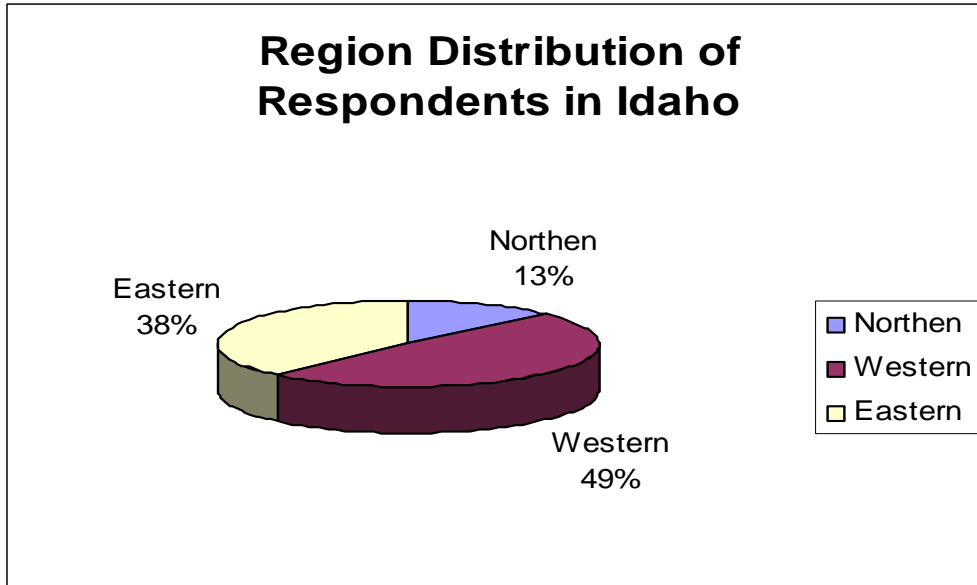
Figure 3. Profession Distribution of Respondents

Profession Distribution of Respondents

1%
1%
15%
83%

- Audiologists
- Speech Language Pathologists (SLP)
- SLP and Audiologist
- Other
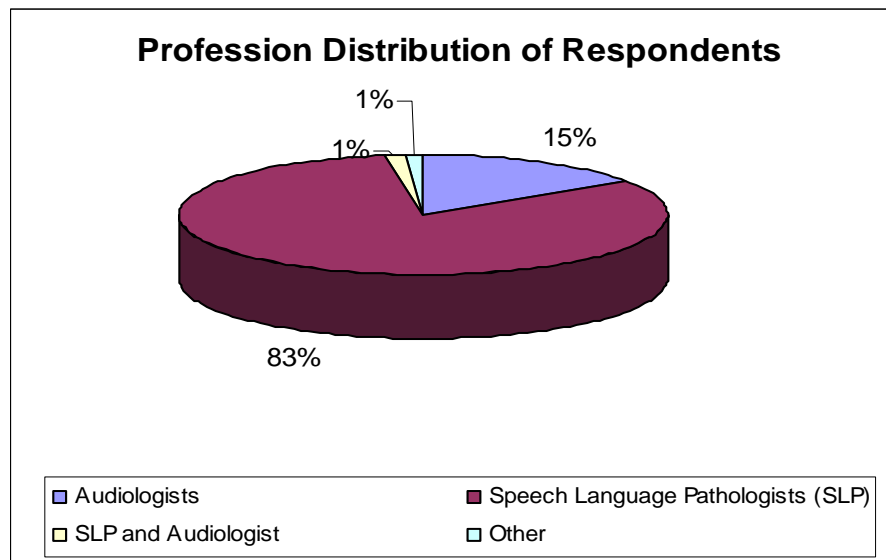
Information Need and Use

In the survey, speech language pathologists and audiologists were given several options to choose when they locate information for their need in clinical practices. The results showed that *Look for information yourself* ranked as the most frequently used. The second most frequently used was *Ask a colleague*, and the third was *Look for an information specialists or librarian.* See Figure 4 in page 7.

Resource Use

Non-electronic Resources

The survey asked respondents to indicate how frequently they consulted various non-electronic resources for finding work-related information. Figure 5 below showed colleagues and personal contacts, books, journals and websites were mostly frequently used resources for information. 27 (32.1%) of respondents never used a library and 46 (54.8%) used a library less than once a month. See Figure 5 in page 7.

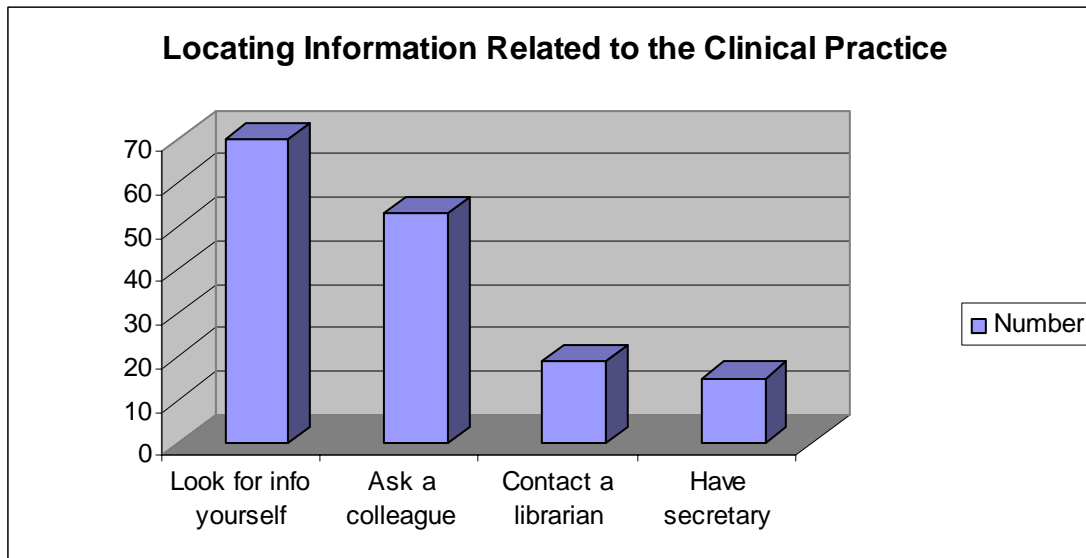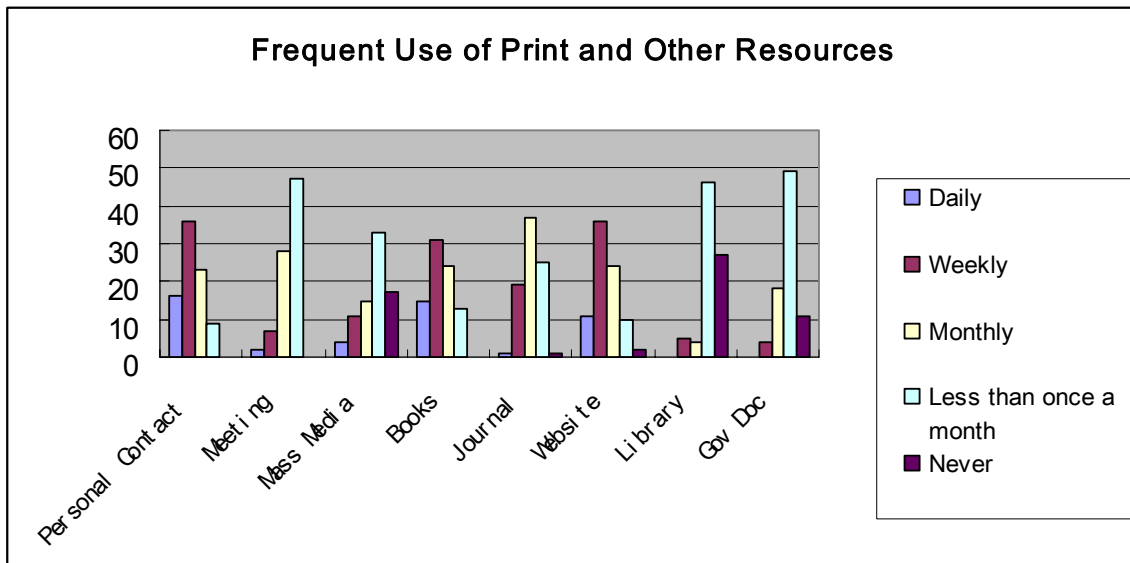**Figure 4. Methods of Locating Information Related to Clinical Practice**

Locating Information Related to the Clinical Practice

Category	Number
Look for info yourself	~72
Ask a colleague	~55
Contact a librarian	~20
Have secretary	~16

Figure 5. Using Non-resources to Find Work-Related Information

Frequent Use of Print and Other Resources

Legend: Daily, Weekly, Monthly, Less than once a month, Never

Electronic Resources

World Wide Web, Email, and professional websites were frequently used to find work-related information. However, many speech language pathologists and audiologists never used electronic databases. See Figure 6. Except for universities, most employers could not afford expensive databases; therefore, access was restricted speech language pathologists and audiologists in use of databases. Another reason was that neither a university library nor a public library provided adequate outreach services to assist these underserved health professionals in database searching. The survey results indicated that these health care professionals did not know how to search these databases and access reliable health information they needed. In fact, PubMed is free access. It covers lots of information about speech language pathology and audiology. In addition, some databases such as Academic Search Premier, Communication & Mass Media Complete, ERIC, Psychology and Behavioral Science Collection, etc. have been purchased at the state level. These databases also include much information about this field, including some of full text articles. They are free resources for Idaho citizens in public libraries.

Figure 6. Frequent Use of Electronic Resources
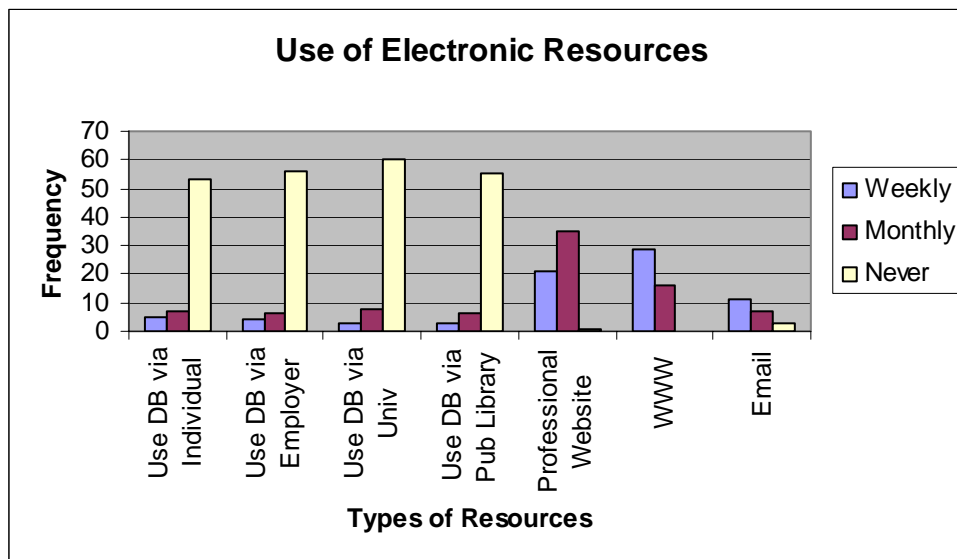
Computer and Internet Access

The survey showed that 97.6% of respondents could access a computer either at home or at work. Concerning the access to the Internet, the survey asked the respondents if they could access to the Internet at work when they needed it. The responses were 59 (70.2) always, 17 (20.2%) usually, 6 (7.1%) sometimes, and 2 (2.4%) never. See Table 3.

Table 3. Frequency of Internet Access When Needed at Work

Internet Access		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Always	59	70.2	70.2	70.2
	Usually	17	20.2	20.2	90.5
	Sometimes	6	7.1	7.1	97.6
	Never	2	2.4	2.4	100.0
	Total	84	100.0	100.0	

Basic Computer and Information Technology Skills

The survey provided three levels of computer skills to let respondents to classify themselves as a computer user. The results showed that speech language pathologists and audiologists had basic computer skills. See Table 4. 19 (22.6%) of the respondents had some knowledge of computer and information technology, 59 (70.2%) respondents claimed that they had sufficient knowledge and 6 (7.1%) of respondents evaluated themselves as an expert.

Table 4. Basic Computer and Information Technology Skills

Basic Computer Skills		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Some	19	22.6	22.6	22.6
	Sufficient Knowledge	59	70.2	70.2	92.9
	Expert	6	7.1	7.1	100.0
	Total	84	100.0	100.0	

Skills and Knowledge in Database Searching

The survey asked the respondents to answer what proficiency in information searching skills and knowledge in databases related to speech language pathologists and audiologists. Because the databases chosen in the survey cover much information in this discipline, it is necessary to know how to search them. The results showed that 25 (29.8%) of the respondents had no knowledge of PubMed, 46 (54.8) had some knowledge of PubMed (54.8%), but not sufficient. 63 (75.0%) had no knowledge of CINAHL, 67 (79.8%) no knowledge of Cochrane Library, 35 (41.7%) no knowledge of ERIC, 75 (89.3%) no knowledge of EMBASE, 64 (76.2%) no knowledge of PsycINFO, and 40 (47.6%) no knowledge of evidence-based medicine/practice. 38 (45.2%) of the respondents did not know what Boolean operators meant. See Figure 7.

**Figure 7. Skills and Knowledge in Searching Database**
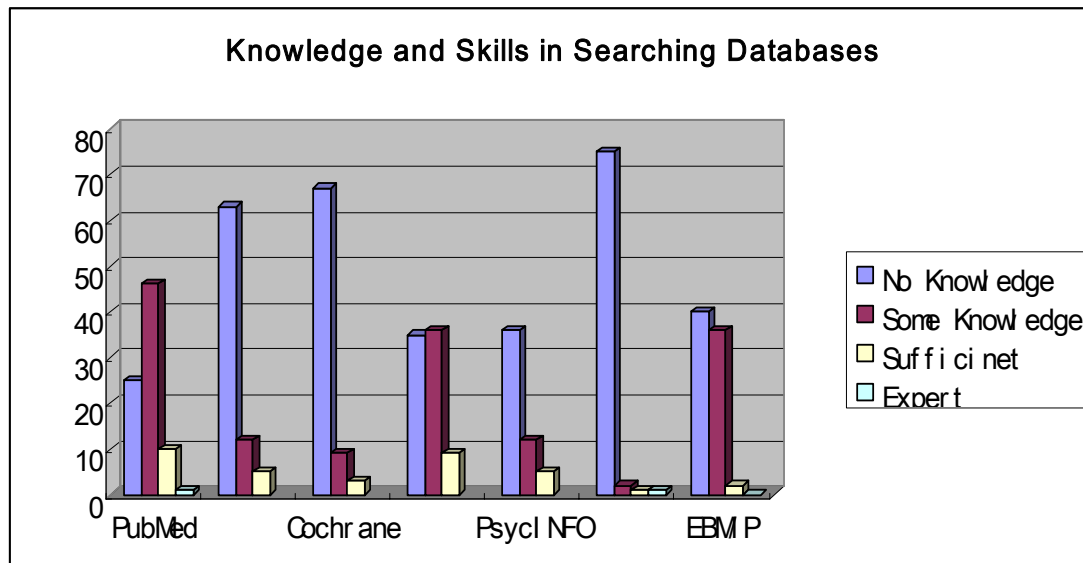
Interest in Receiving a Training Program

More than 50% of the respondents did not know most databases related to their fields that were listed in the survey. Therefore, the survey showed that they were

interested in receiving a training program, such as workshops on database searching and evidence-based clinical practice resources, online tutorials, etc. Figure 8 shows the number of respondents who were interested in a training program and what databases they wanted to learn to search.

Figure 8. Interest in Educational Training
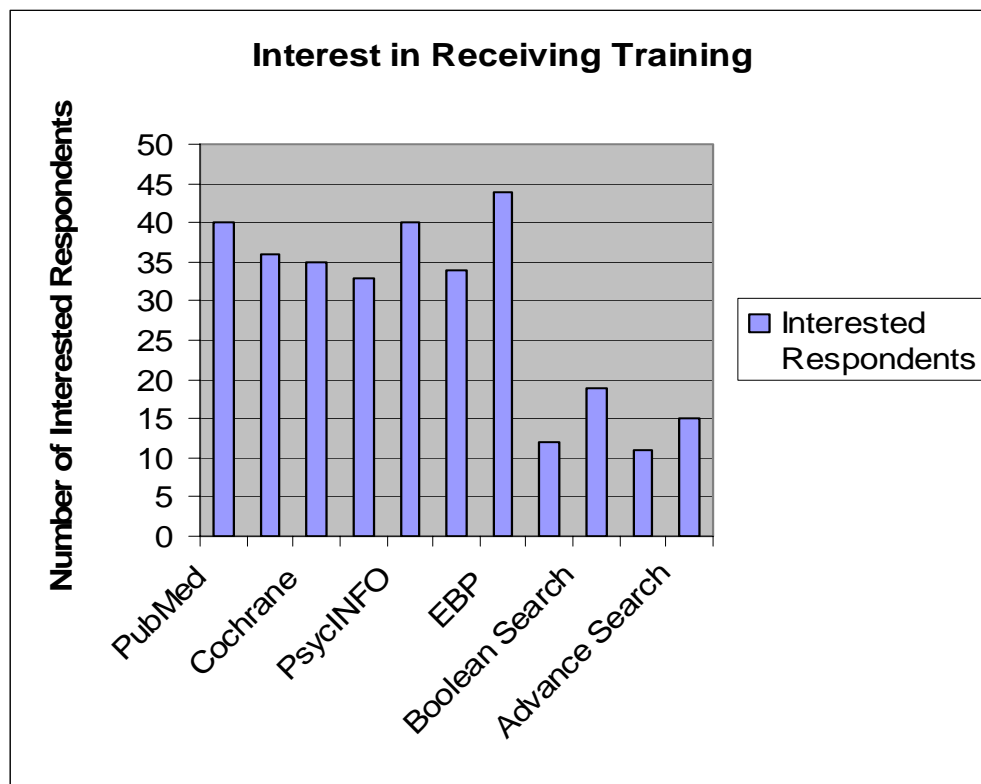
Training

Training Methods

Training methods were given to the respondents to choose. *Take a class or workshop in person* was ranked the first preference by the respondents. The second preference was *Use an online interactive tutorial via the web*. The third preference was *Take a class or workshop via distance learning*. It makes sense that the respondents

chose online tutorials and distance learning as the second and third preferences, given the geographic features in the state of Idaho.

Training Hours

41 (48.8%) respondents wanted to receive 8 hours of training. 19 (22.6%) preferred 4 hours. 17 (20.2%) respondents, 2 to 3 hours.

DISCUSSIONS

Survey Distribution Methods

The survey results indicated that the combined distribution methods could increase the total response rate. Providing an array of options, including email, mail, onsite, and/or an attachment was allowed the respondents to use their preferred method of the return. 3 out of 84 (3.5%) respondents were sent a hard copy preferred responding via the online survey. 5 out of 132 (5.95%) email distributed did not take the online survey; however, they returned their response by mail instead. Two of the project team members attended the ISHA convention. During the convention, 16 surveys were distributed. The onsite return rate was 7.37% (16/217). This method met the needs of the professional's time and could be considered as an additional delivery method. However, the response onsite was obtained only from the professionals who were interested in the survey (3). This might have a bias.

Information Need and Use

It was found that when speech language pathologists and audiologists needed information in the clinical setting, the first thing they do was retrieve information by themselves. If they could not find it on their own, they first turned to their colleagues for the information. If they could not get information from their colleagues, they then contacted librarians or information specialists to seek assistance. This all depends on the

knowledge and skills in searching information they have. If they have sufficient knowledge and skills, it is easy for them to find the information they need to solve the comprehensive problems in the clinical setting. If a speech language pathologist or an audiologist does not have these skills, her or his clinical practice for right decision in better assessment and treatment of patients may be effected.

Resource Use

It was noted in the survey that the respondents mostly consult colleagues, books, journals, and website sources for finding work-related information. However, 32.1% of the respondents never used a library and many respondents did not have access to the databases in their field.

Computer and Information Searching Knowledge and Skills

Speech language pathologists and audiologists had basic computer and Internet searching skills. However, 84.6% of the respondents had no sufficient knowledge and searching skills in PubMed. PubMed is the most heavily used medical database, developed by the National Library of Medicine. It is a premier medical resource for the speech language pathologists and audiologists and has free access.

Evidence-based Medicine/Practice

The term evidence-based practice refers to an approach in which current, high-quality research evidence is integrated with practitioner expertise and client preferences and values into the process of making clinical decisions. In making clinical practice evidence-based, audiologists and speech language pathologists now recognize the needs, abilities, values, preferences, and interests of individuals and families to whom they provide clinical services, and integrate those factors along with best current research evidence and their clinical expertise in making clinical decisions. 47.6% of the

respondents in the survey had no knowledge of evidence-based medicine/practice. That was why 52.4% of the respondents would like to receive this training.

Training Program

The survey results clearly showed that there was a demand for providing speech language pathologists and audiologists with the training program on database searching and evidence-based practice. Most of the respondents would prefer a workshop in person on these topics so that they can learn how to search and get more hands-on practice. Idaho is a rural state. An online tutorial and distance learning are also their preferred method. The speech language pathologists and audiologists can learn about the evidence-based practice and information searching online at their own pace, and they can save time and travel expenses.

CONCLUSION

In summary, speech language pathologists and audiologists have basic computer and information searching knowledge and skills on the Internet. Most respondents have no problems using computers and accessing the Internet. However, many of them lack the knowledge to search databases related to their fields. A certain percentage of speech language pathologists and audiologists did not have knowledge of evidence-based medicine/practice. The results indicated that learning about evidence-based practice and searching these resources are of interest to most professionals in speech language pathology and audiology in Idaho. The survey results guided the selection of educational training methods and training time preferred.

FUTURE RESEARCH

According to the survey, educational programs on database searching and evidence-based practice are needed. Launching workshops onsite and other forms of training will be planned. A study evaluating the training programs and the use of

resources will be designed. Given the geographic features in Idaho, developing online tutorials of how to search related databases are also on the agenda for the future research project.

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ACKNOWLEGEMENTS

Information Needs Survey
for
Idaho Speech-Language Pathologists and Audiologists

A. Information Use/Needs

1. **How do you usually find or locate information regarding your clinical practice? Please rank the following with 1=most frequent and 5=least frequent.**

   __Look for information yourself

   __Contact an information specialist/librarian

   __Have secretary/assistant look for information

   __Ask a colleague

   __Other (Specify): _____

   _____

   _____

   _____

2. **How often do you use the following resources to find work-related information?**

   2.1. Print and other resources

   Resources   **Frequency of Use**

Print and Other Resources	Daily	Weekly	Monthly	Less than once a month	Never
Colleagues/personal contacts					
Conferences/meetings					
Mass media (newspapers, television, radio)					
Books/manuals					
Journals					
Websites on the Internet					
Libraries					
State/federal agency reports/documents/brochures					
Please list additional print or other non-electronic resources you use and indicate the frequency used.	Daily	Weekly	Monthly	Less than once a month	Never

2.2. Electronic resources

Resources   **Frequency of Use**

Electronic Resources	Daily	Weekly	Monthly	Less than once a month	Never
Electronic databases accessed directly through individual subscriptions (CINAHL, PsycINFO, etc.)					
Electronic databases accessed directly through employment subscriptions (CINAHL, PsycINFO, etc.)					
Electronic databases accessed through the University Library or its website (e.g. Idaho State University Library)					
Electronic databases accessed through the Public Library or its website					
Professional websites (Idaho Speech-Language & Hearing Association Website, American Speech-Language-Hearing Association Website, etc.)					
Internet (world wide web) search					
Email					
Mailing lists, listservs, and electronic bulletin boards					
Please list any other electronic resources you use and indicate the frequency used.	Daily	Weekly	Monthly	Less than once a month	Never

2.3. Access to the Idaho State University Library and its databases

Access to the Idaho State University Library and its Databases	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
I use the Idaho State University (ISU) Library routinely.					
I do not have time to use the ISU Library.					
The ISU Library is easy to access.					
I feel comfortable using the ISU Library Website.					
The ISU Library has relevant resources.					
I do not know how to use the ISU Library Website.					
The ISU Library Website is confusing.					
I do not know which databases to use.					
I feel comfortable using electronic databases					

B. Computer/Information Technology Skills

1. The following items involve your skills and knowledge regarding information technology. Please check all that apply.

Do you use your computer to access clinical practices information?	__At work __At home __Both __None
On average, how many hours a week do you use a computer, either at home or work or both, for job-related activities?	__0 hour __5 hours __ 10 hours __15 hours __20 hours __30 hours __>40 hours
Do you have access to the Internet?	__At work __At home __Both __None
Is your Internet access at work	__Dial_up __ Modem/Cable __DSL __LAN (Local Area Network) __Other (please specify) _____
Is your Internet access at home	__Dial_up __ Modem/Cable __DSL __LAN (Local Area Network) __Other (please specify) _____
How often do you have access to the Internet at work when you need it?	__Always __Usually __ Sometimes __ Never
If you use any of the electronic resources listed in Section 2.2, where do you access them?	__Work __Home __ Library __Other (Specify): _____
Basic computer skills (word processing, Excel, PowerPoint, anti-virus, etc)	__No knowledge ___Some knowledge __Sufficient knowledge __Expert
Document viewers (Adobe Acrobat Reader)	__No knowledge ___Some knowledge __Sufficient knowledge __Expert
Mailing list, listserv, and electronic bulletin board	__No knowledge ___Some knowledge __Sufficient knowledge __Expert
Do you know how to download data, software, or programs from the Internet?	__Yes __No
Do you have an email account?	__No __Yes, at work __Yes, at home
Overall, how would you classify your self as a computer user	__Beginner __Intermediate __Advanced

2. **Please indicate your proficiency in information searching skills and knowledge. And then indicate whether or not you are interested in instruction.**

Skills/Knowledge	No knowledge/experience	Some knowledge/experience	Sufficient Knowledge/experience	Expert	Interested in instruction? Yes	No
MEDLINE (PubMed)						
CINAHL						
Cochrane Library						
ERIC						
EMBASE						
PsycINFO						
Other databases. Specify_____						
Evidence-based medicine/clinical practice (levels of evidence, PICO module, etc)						
Basic information searching (keyword search)						
Boolean Operators (AND, NOT, OR)						
Advanced search (subject search)						
Internet search engines e.g. Google, Yahoo						

3. **If you indicated that you are interested in instruction, rank the following methods using a scale from 1 to 5 with 1 representing most preferred and 5 indicating least preferred.**

Training Method	1 (Most Preferred)	2	3	4	5 (Least Preferred)
One-on-one assistance					
Read a training guide or manual (posted or emailed to them)					
Take a class or workshop in person					
Take a class or workshop via distance learning					
Use an online interactive tutorial via the web					
Please list any other training method you prefer:					

4. **What is the maximum amount of time you can allocate at one time to attend a hands-on-training session**

__Full-day (8 hours)   __Half-day (4 hours)   __2-3 hours

__Other (Specify): _____

_____

C. Other Information

1. Please specify other information, tools, or resources that enable you to do your work better.

_____

2. Please provide any other comments/suggestions regarding this survey:

_____

_____

_____

_____

D. Professional/Demographic Information

To help us understand our sample, please complete the following:

Work setting	__School system __Private practice __Hospital/Rehab center ___Long term care __University __Other (Specify): _____
Which region in Idaho do you work?	__Northern (1) __Western (2) __Eastern (3)
The category that most accurately describes your job function	__Audiologist __Speech-Language Pathologist __Speech-Language Pathologist/Audiologist __Teacher of the hearing impaired/deaf Other (Specify):_____
Highest degree of education	__Bachelor's degree __Master's degree __Doctorate (MD, PhD, EdD, AuD)
Year most advanced degree completed	Year_____
Gender	__Male __Female
Age	__20-29 __30-39 __40-49 __50-59 __60-69 __>70
Years experience in SLP or Audiology	__Less than 1 __1-5 __6-10 __11-15 __16-20 __> 21
Hours of work per week	__<10 __11-20 __21-35 __>36